

**EPA Superfund
Record of Decision Amendment:**

**MARZONE INC./CHEVRON CHEMICAL CO.
EPA ID: GAD991275686
OU 01
TIFTON, GA
05/02/2000**

Site:	
Break:	5.9
Other:	



***AMENDED RECORD OF DECISION
SUMMARY OF REMEDIAL ALTERNATIVE SELECTION***

***MARZONE INC/CHEVRON CHEMICAL COMPANY SITE
OPERABLE UNIT ONE
TIFTON, TIFT COUNTY, GEORGIA***

***PREPARED BY
U. S. ENVIRONMENTAL PROTECTION AGENCY
REGION IV
ATLANTA, GEORGIA***

DECLARATION
of the
AMENDED RECORD OF DECISION

SITE NAME AND LOCATION

Marzone Inc./ Chevron Chemical Company Site,
Tifton, Tift County, Georgia

STATEMENT OF BASIS AND PURPOSE

This decision document (Amended Record of Decision) presents an amendment to the selected remedial action for Operable Unit One of the Marzone Inc./ Chevron Chemical Company Site, Tift County, Georgia, developed in accordance with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended, 42 U.S.C. Section 9601 *et seq.*, and in accordance with, the National Contingency Plan (NCP) 40 CFR Part 300.

The original remedy for Operable Unit One (OU1) was selected in a Record of Decision (ROD) dated September 1994. Amendments to the soil remedy contained in the ROD for OU1 were issued in June 1997 and November 1998. Significant, but not fundamental, changes to the ROD for OU1 were documented in an Explanation of Significant Differences dated July 1998. Based on new information obtained during the Remedial Design, it was determined that the groundwater remedy should be amended. This ROD Amendment provides for necessary changes to the remedy to increase the protectiveness or effectiveness of the remedy. This ROD amendment is consistent with the Superfund Administrative Reforms Guidance.

This amended decision is based on the administrative record for the Marzone Inc./Chevron Chemical Company Site. In addition, this ROD amendment will become a part of the Administrative Record for the site. The Administrative Record for this site can be found at the Information Repository located at the United States Environmental Protection Agency, 61 Forsyth Street, Atlanta, Georgia 30303 or the Tifton and Tift County Library, One Library Lane, Tifton, Georgia, 31794.

The State of Georgia has concurred on this amendment to the selected remedy (Appendix A).

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this ROD amendment, may present an imminent and substantial endangerment to public health, welfare or the environment.

DESCRIPTION OF SELECTED REMEDY

This document is an amendment to the remedial action described in the Record of Decision (ROD) dated September 30, 1994 for Operable Unit One of the Site. The function of the remedy, as described in the ROD as amended, is to remove or treat contamination and reduce it to health based levels which are protective of human health and the environment. Contaminated soils and groundwater are the principal threats at the site.

The soil remedy, as previously amended, remains unchanged. The major components of the soil remedy were:

- The excavation of all surface soil contamination above the performance standards,
- The excavation of subsurface soil to meet performance standards on a site-wide basis and, thus, achieve protection of groundwater,
- The transportation of the excavated soil to a permitted landfill for offsite disposal,
- The placement of clean fill soil in the excavated areas, and
- Air monitoring to ensure safety of nearby residents and workers.

The major components of this amended groundwater remedy are:

- The implementation of institutional controls to restrict the use of groundwater as a drinking water source until performance standards are achieved,
- The design and construction of an in-situ funnel-and-gate system, consisting of an impermeable barrier wall which directs the contaminated groundwater through a granular activated carbon treatment medium,
- The start-up, operation, and maintenance of this system,
- Reduction of contamination in groundwater south of the treatment system (approximately 7% of total contamination) by natural attenuation, and
- The operation and maintenance of a long-term groundwater monitoring program. This includes periodic monitoring of the effectiveness of the treatment system and of natural attenuation.
- The proper closure of the treatment system after performance standards are met.

The selected remedy was installed as a full-scale pilot project in 1998. The system has been successfully treating groundwater that passes through the system since installation.

STATUTORY DETERMINATIONS

The selected remedy, as amended, is protective of human health and the environment, complies with federal and state requirements that are legally applicable or relevant and appropriate, and is cost-effective. This remedy utilizes permanent solutions and alternative treatment technology to the maximum extent practicable, and satisfies the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element.

A handwritten signature in black ink, appearing to read "Richard D. Green", written over a horizontal line.

**Richard D. Green, Director
Waste Management Division**

A handwritten date "2 May '00" in black ink, written over a horizontal line.

Date

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AMENDED RECORD OF DECISION

The Decision Summary Marzone Inc./Chevron Chemical Company Site

1.0 Site Name, Location, and Description

The Marzone, Inc./Chevron Chemical Company Site (hereinafter the Marzone Site or the Site) is located in south-central Georgia in the City of Tifton, near the intersection of Golden Road and Norfolk Southern Railroad (Figure 1). The Site consists of two separate study areas called operable units (OUs). This Record of Decision covers OU1. OU1 consists of the former pesticide production area, a part of the property adjacent to the former formulation area, and part of the adjacent railroad drainage ditch.

Although the property is accessible from all directions, the only roadway access is from Golden Road which borders the property to the north. Across Golden Road to the north is a former lumber mill. To the west of the property is an active railroad and a former wood treating facility. To the east and south is residential property, which includes an open barn and horse pasture. A municipal drinking water supply well is located less than 100 yards to the northwest. Farther to the north and west of this well is a residential area. Also, approximately 500 feet east of OU1 of the Site is a house.

Bordering the southern portion of OU1 of the Marzone Site was a former shed and planing mill. Further south of the former production area was a former burn pit area used to burn planing mill wastes. Beyond the former burn pit area to the southeast is the Golden Seed property where a former fertilizer facility was operated. To the south of the Marzone Site and the Golden Seed property is Gum Creek. In July 1999 EPA issued a Record of Decision for Operable Unit 2 which includes the Golden Seed Property and the Gum Creek area.

Existing features on OU1 of the Marzone Site include the north and south warehouse buildings. Former features included a drum storage area, a liquid formulation area, a vertical chemical storage tank, an adjacent tank pad which supported above-ground chemical tanks, a loading dock area, and an asphalt parking area and concrete slab (Figure 2). Additional features on OU1 included a rinsate pond (lagoon) in the southeast portion, and a former truck loading area in the eastern portion. A drainage ditch ran along the southern boundary and was referred to as the "south drainage ditch." A drainage ditch, referred to as the "railroad drainage ditch," runs along portions of the Norfolk Southern Railroad and the railroad spur south and southeast of the Site.

2.0 Site History and Enforcement Activities

The pesticide formulation facility was developed in 1950 and operated as such until January 1983. After 1983, OU1 of the Site was used primarily for general storage and plant seedling distribution, as well as vegetable washing and repackaging activities. Currently, OU1 of the Marzone Site is not used.

From 1950 to 1970, Chevron Chemical Company operated a pesticide formulating plant at OU1 of the Site. From 1950 to about 1960, Chevron formulated dry pesticide dusts and in 1960 liquid formulation was added. The liquid formulation used xylene and xylene-based mixtures as carrier liquids. Bulk chemical handling facilities operated during these years included unpaved railcar and truck loading areas for bass materials and finished products; bulk liquids were unloaded by tanker truck into vertical aboveground storage tanks. Only the western portion of the current building was in existence. The remainder of OU1 was unpaved. In 1970, Chevron sold the facility to Mr. Billy Mitchell who founded the Tifton Chemical Company which formulated and marketed liquid and dry pesticides similar to Chevron's. These included DDT, toxaphene, parathion, methyl parathion, malathion, and chlordane; Tifton Chemical Company also produced sulfur-based products.

Tifton Chemicals sold the operation in 1977 to Tifchem Products, Inc. Inspections made by the Georgia Department of Natural Resources (GaDNR) indicated repeated rinsate discharges to unlined drainage ditches leading to the former rinsate pond (lagoon) located at the southeast corner of the property, off-site discharges, and poor housekeeping practices inside and around the buildings. It is likely that Tifchem formulated common organophosphate and organochlorine pesticides. GaDNR records mention atrazine, endrin, and toxaphene in connection with this operation. Tifchem defaulted to the Farmer's Bank of Tifton in 1979 leaving large quantities of pesticides on-site.

Marzone Chemical Company (Marzone) purchased the property in January 1980, and operated it as a pesticide formulating facility until September 1982. Marzone reportedly formulated methyl and ethyl parathion, toxaphene, lindane, DDT, chlordane, Sevin, atrazine, malathion, and heptachlor at the Site. Prior to operation, Marzone was required by the GaDNR to remove the estimated 70,000 pounds of pesticides which remained at the Site from the Tifchem operation. GaDNR also required Marzone to close the rinsate pond (lagoon) and replace it with a system resulting in zero discharge. The pond water and sludge reportedly were disposed at the Pinewood disposal facility in South Carolina.

In 1983, regular commercial operations at the Site ceased when Kova Fertilizer, Inc. (Kova) acquired the property in a foreclosure. A GaDNR inspection of the Site, following Kova's

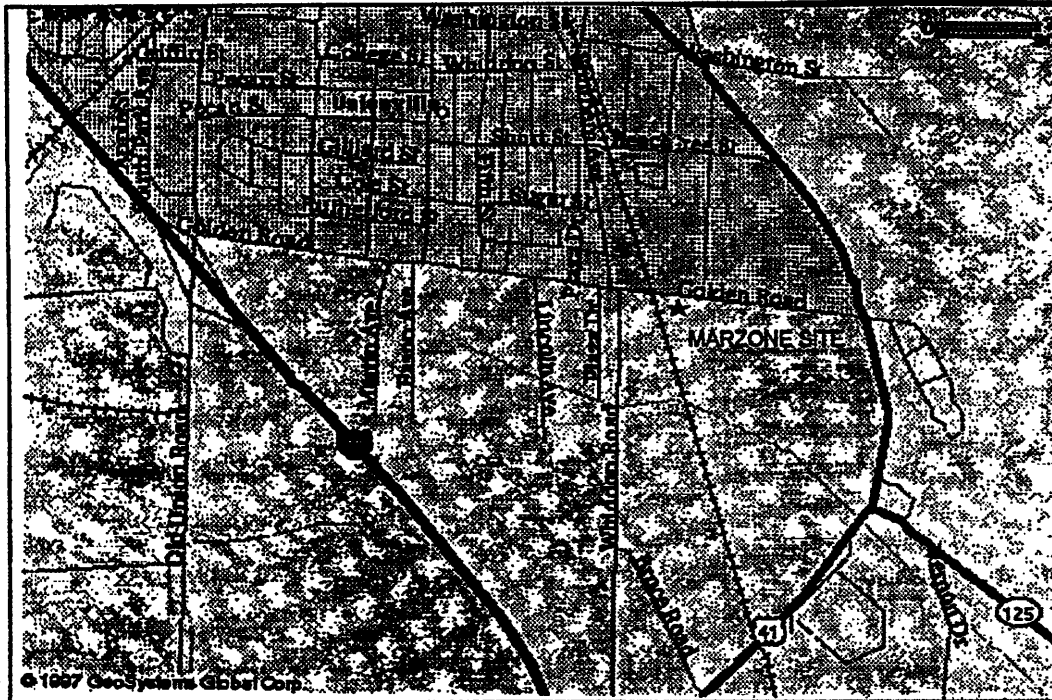


Figure 1
Site Location

acquisition, identified open drums of pesticides and pesticide wastes on-site. In 1984, a notice of violation was issued and the GaDNR required Kova to remove all hazardous waste, contaminated soil, and debris from the Site within 45 days. Kova manifested 49 drums of pesticide waste for off-site disposal by Chemical Waste Management. In May 1985, ownership was transferred to Kova of Georgia.

In August 1985, the property was purchased by Milan, Inc., the current owner of OUI of the Site; it has been used for general storage, plant seedling distribution, and vegetable washing and repackaging. A fence to secure the area was added in May 1993.

To date a number of Removal Actions have been taken at the Site. Records of the Georgia Environmental Protection Division (GaEPD) identified concerns at the Site as early as 1973. In 1979, Marzone, Inc. in response to a GaEPD compliance order, removed waste from the rinsate pond. Marzone reported that they removed 35 tons of sludge from the rinsate pond area. The rinsate pond was filled with compacted topsoil and clay. Analyses of the sludge samples identified atrazine, lead, and arsenic. An additional 5 tons of pesticide wastes were removed by Kova Fertilizer, Inc., under GaEPD's direction in March 1984. In September 1984, the EPA conducted an investigation at the Marzone Site. Analyses of soil and water samples collected at the Site, indicated that pesticides, including endrin, heptachlor, DDT, chlordane, toxaphene, atrazine, methyl and ethyl parathion, lindane, DDD, and malathion were still present in the soil and/or groundwater. In October 1984, based on the results of the investigation, EPA initiated response actions at the Marzone Site. Approximately 1,700 tons of waste were reportedly removed from the Site and disposed of at a permitted hazardous waste landfill. In May 1985, Chevron contracted with OH Materials Co. for an additional removal of contaminated materials from the rinsate pond and drainage ditches. Approximately 2,200 tons of material was removed during this action. These removal actions were conducted to abate substantial threats to human health and the environment. Residual risk of a lesser degree remained at the Site subsequent to the emergency removal actions.

The Marzone, Inc./Chevron Chemical Company Site was proposed for the National Priorities List (NPL) in June 1988, and became final in August, 1989. In September 1990, Kova Fertilizer, Inc., Kova of Georgia, Chevron Chemical Company, and Billy G. Mitchell, signed an Administrative Order by Consent (AOC) with EPA for the Site. The AOC directed the PRPs to develop and implement a Remedial Investigation/ Feasibility Study (RI/FS) which identified the nature and extent of contamination and proposed remedial action for the Site. The RI report presented the methods, results, and conclusions of the investigation. The FS report included development, screening, detailed analysis,

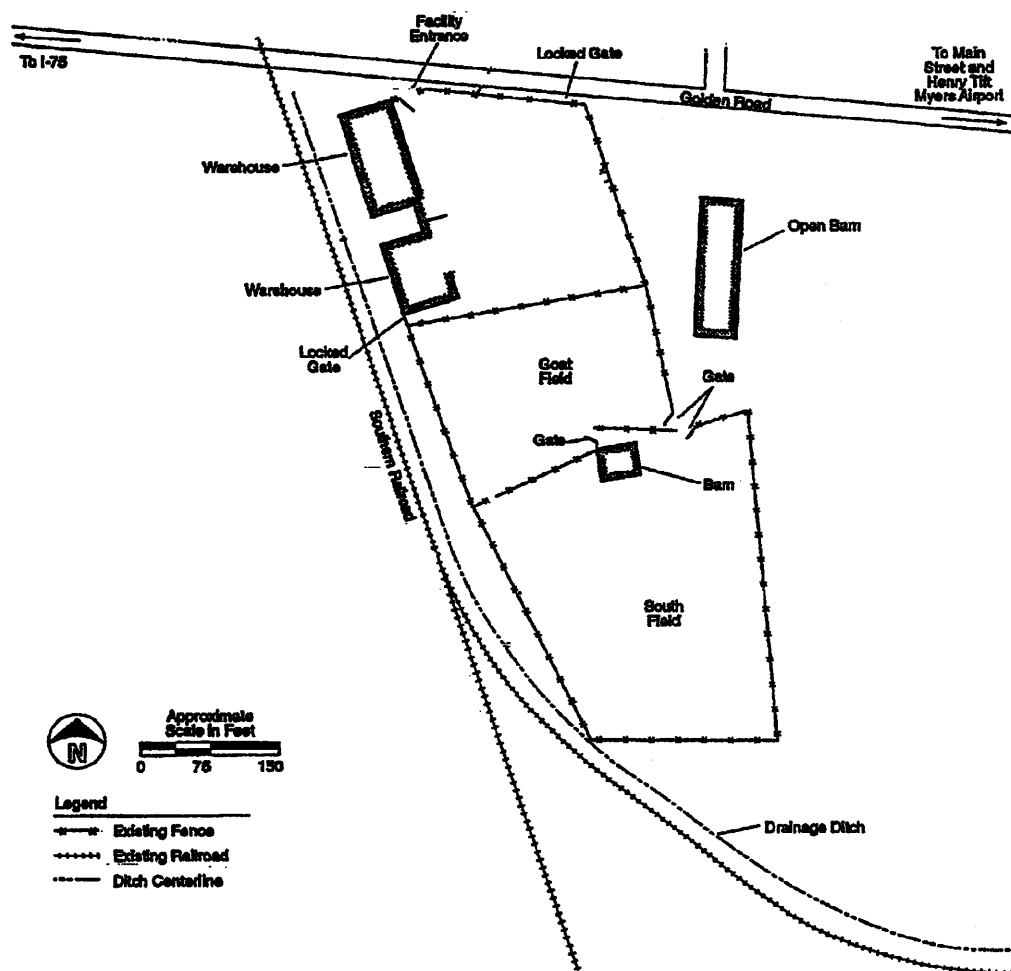


Figure 2
Site Map - OU1 Area

conclusions and recommendations for the Remedial Action Alternatives.

EPA issued its Record of Decision selecting the original remedy for OU1 of the site in September 1994. EPA continued its enforcement activities by sending Special Notice Letters to those identified as potentially responsible for the contamination at the Site. None of the responsible parties were willing to enter into a Consent Decree (CD) agreeing to carry out the Remedial Design/Remedial Action (RD/RA). Accordingly, in July of 1995, EPA issued Unilateral Administrative Orders (UAOs) to implement the ROD to Chevron Chemical Company (Chevron) and Kova Fertilizer Inc. (Kova) to carry out the remedial design and the remedial action (RD/RA) at the site. After issuance of the UAOs, Chevron and Kova expressed interest in entering into a CD. A CD was lodged with the U.S. District Court, but was later withdrawn by the United States. Work at the Site continues under the UAO.

Remedial design began in September 1995. The soil remediation for OU1 was completed in early 1999. A full-scale pilot groundwater remedy was installed in Summer 1998.

3.0 Reasons for Issuing ROD Amendment

This ROD Amendment does not modify the results of the risk assessment or change the cleanup goals/action levels documented in the original ROD, as amended, and the December 1999 proposed plan fact sheet for a ROD amendment. The purpose of this Amended ROD is to take into account new information received by EPA regarding the most effective groundwater remedy.

The major components of the original selected remedy provided for in the Record of Decision signed September 1994 include remedies for groundwater and soil. The major component of the soil remedy, as amended, remain unchanged, including:

- The excavation of all surface soil contamination above the performance standards,
- The excavation of subsurface soil to meet performance standards on a site-wide basis and, thus, achieve protection of groundwater,
- The transportation of the excavated soil to a permitted landfill for offsite disposal,
- The placement of clean fill soil in the excavated areas, and
- Air monitoring to ensure safety of nearby residents and workers.

During the Remedial Design phase for the groundwater remediation, EPA recognized that a pump and treat system may not be the most efficient remedy given the soil characteristics at the Marzone site. Other technologies have become available, since the September 1994 ROD, which can more effectively take advantage of the natural movement of the groundwater through the soil. These systems were evaluated and compared with the pump and treat system. The comparison (documented in the Feasibility Study Addendum for Groundwater Remediation (FS Addendum)) demonstrated that new treatment methods could result in greater short-term and long-term effectiveness. An additional document (Marzone Site Long-Term Monitoring Plan to Evaluate Natural Attenuation) documented that natural attenuation is effective in reducing contamination at OU1 of the Site. The major components of the amended groundwater remedy are:

- The implementation of institutional controls to restrict the use of groundwater as a drinking water source until performance standards are achieved,
- The design and construction of an in-situ funnel-and-gate system, consisting of an impermeable barrier wall which directs the contaminated groundwater through a treatment medium,
- The start-up, operation, and maintenance of this system,
- Reduction of contamination in groundwater south of the treatment system (approximately 7% of total contamination) by natural attenuation,
- The operation and maintenance of a long-term groundwater monitoring program. This includes periodic monitoring of the effectiveness of the treatment system and of natural attenuation, and
- The proper closure of the treatment system after performance standards are met.

EPA's rationale for modifying the remedy selected in the original ROD is based on new information obtained by EPA during the Remedial Design phase. The modification involves changing the selected groundwater remedy for the site from a pump-and-treat remedy to a funnel-and-gate system.

4.0 Summary of Site Characteristics and Risks

Site characteristics and risks for groundwater remain as described in the original ROD and the December 1999 proposed plan fact sheet for a ROD amendment.

5.0 Description of the Alternatives

EPA evaluated four possible alternatives, plus the no action alternative, in the FS Addendum for cleaning up the groundwater at OU#1 at the Marzone Site. The table on page 9 lists each alternative, the cost associated with each, and the time required to implement each one.

6.0 Summary of the Comparative Analysis of Alternatives

This section of the ROD amendment provides the basis for determining which alternative provides the best balance with respect to the statutory balancing criteria in Section 121 of CERCLA and in Section 300.430 of the NCP. The major objective of the FS addendum was to develop, screen, and evaluate alternatives for the groundwater remediation at the Marzone Site. These alternatives became available after the original ROD. Four alternatives, plus the no action alternative, were evaluated using the following nine evaluation criteria:

- Overall protection of human health and the environment.
- Compliance with applicable and/or relevant Federal or State public health or environmental standards.
- Long-term effectiveness and permanence.
- Reduction of toxicity, mobility, or volume of hazardous substances or contaminants through treatment.
- Short-term effectiveness, i.e., the impacts a remedy might have on the community, workers, or the environment during the course of implementing it.
- Implementability, i.e., the administrative or technical capacity to carry out the alternative.
- Cost-effectiveness considering costs for construction, operation, and maintenance of the alternative over the life of the project, including additional costs should it fail.
- Acceptance by the State.
- Acceptance by the Community.

The NCP categorizes the nine criteria into three groups:

(1) Threshold Criteria - overall protection of human health and the environment and compliance with ARARs (or invoking a waiver) are threshold criteria that must be satisfied in order for an alternative to be eligible for selection;

TABLE 1 - ALTERNATIVE DESCRIPTIONS

Description of Alternatives	Cost	Time to Implement
<p><u>Alternative 0 - No Action</u> The no action alternative is used as required by the National Contingency Plan (NCP), the regulation implementing the Superfund Law. It is used as a baseline for comparing other alternatives. This alternative involves no active measures, so no capital costs would be required. Monitoring for a five-year review would be required.</p>	\$0	0 months
<p><u>Alternative 1 - GAC Treatment Wall</u> This alternative involves installation of a continuous wall of granular activated carbon (GAC) perpendicular to the flow of contaminated groundwater. Groundwater would be treated as it flowed through the GAC wall.</p>	\$3,200,000	4 months
<p><u>Alternative 2 -ZVI/GAC Treatment Wall</u> This alternative involves installation of a continuous wall of zero-valent iron (ZVI) and GAC perpendicular to flow of contaminated groundwater. Groundwater would be treated as it flowed through the ZVI/GAC wall. The ZVI would remove dissolved metals and degrade some pesticides.</p>	\$2,940,000	4 months
<p><u>Alternative 3 - Funnel-and-Gate System</u> This system is composed of an impermeable barrier wall which directs the contaminated groundwater to a GAC treatment medium.</p>	\$1,210,000*	3 months*
<p><u>Alternative 4 - Pump-and-Treat System</u> This system involves several extraction wells which withdraw contaminated groundwater. The groundwater is treated in an above-ground treatment system, before reinjected underground or disposed off-site. Alternative A utilizes traditional vertical extraction wells. Alternative B utilized a horizontal extraction well, which could be more efficient.</p>	<p>Alternative A - \$1,100,000</p> <p>Alternative B - \$1,250,000</p>	4 months

*Actual cost and time for pilot project installation.

(2) Primary Balancing Criteria - long-term effectiveness and permanence; reduction of toxicity, mobility, or volume; short-term effectiveness; implementability, and cost are primary balancing factors used to weigh major trade-offs among alternative hazardous waste management strategies; and

(3) Modifying Criteria - state and community acceptance are modifying criteria that are formally taken into account after public comment is received on the proposed plan and incorporated in the ROD amendment.

The selected alternative must meet the threshold criteria including compliance with all ARARs or be granted a waiver for compliance with ARARs. Any alternative that does not satisfy both of these requirements is not eligible for selection. The Primary Balancing Criteria are the technical criteria upon which the detailed analysis is primarily based. The final two criteria, known as Modifying Criteria, assess the public's and the state agency's acceptance of the alternative. Based on these final two criteria, EPA may modify the remedial action.

The following analysis is a summary of the evaluation of alternatives considered for remediating the groundwater for OU1 of the Marzone Site under each of the criteria.

Threshold Criteria

6.1 Overall Protection of Human Health and the Environment

All alternatives are capable of eventually meeting the applicable groundwater performance standards and would be protective of human health and the environment. However, Alternative 0 (no action) provides no treatment and therefore is expected to take longer to achieve the groundwater performance standards than the other alternatives. The protectiveness of Alternative 0 is dependent on the continued avoidance of the shallow groundwater aquifer as a drinking water source, since monitoring would not be conducted to determine when contamination had naturally attenuated.

6.2 Compliance with ARARs

All alternatives would eventually comply with ARARs, since natural attenuation is considered likely to eventually reduce contamination under the no action alternative (Alternative 0). Alternatives 1 through 4 would meet ARARs sooner over most of the area of contamination than would the no action alternative.

Primary Balancing Criteria

6.3 Long-Term Effectiveness and Permanence

All groundwater alternatives would be effective in the long-term (greater than 30 years) and would provide permanent solutions. However, alternative 0 would take longer to achieve a permanent solution because it uses no treatment technology. Also, alternative 4A is considered less effective because of the low pumping rates and small capture zones anticipated with vertical wells given the Marzone soil type.

6.4 Reduction of Toxicity, Mobility or Volume Through Treatment

Alternative 0 does not utilize any treatment to reduce toxicity, mobility, or volume. The remaining alternatives all use treatment to reduce toxicity or mobility of contaminants. In addition, these alternatives also provide some control of the groundwater movement, which also reduces contaminant mobility.

6.5 Short-Term Effectiveness

None of the groundwater alternatives will achieve groundwater performance standards in the short term. Alternative 3 has been constructed as a full-scale pilot project; alternatives 1, 2, and 4 can be constructed within a relatively short time-frame (five months or less). Alternative 0 would have no adverse short-term impacts due to construction or operation. For alternatives 1, 2, and 4, the remedies can be constructed using measures to protect workers and residents from airborne dust and emissions. Steps would also be taken to reduce noise, truck traffic, and other nuisances. Alternatives 4A and 4B require the installation of above-ground facilities. The presence of above-ground facilities with the associated pumps, blowers, and treatment systems would create additional noise and visual impacts at the site.

6.6 Implementability

Alternative 3 was implemented as a full-scale pilot project with readily available construction methods. For the groundwater remedy, alternatives 1, 2, and 4 can be implemented using conventional construction methods. Alternatives 1 and 2 have a higher potential for plugging due to metals in the groundwater or biological growth on the wall and might require frequent replacement. Alternative 2 would have less problems with plugging, since the ZVI wall would remove metals. Alternative 3 can handle plugging problems by replacing only the treatment gate, instead of the entire treatment wall. Alternatives 4A and 4B would be less likely to have significant problems due to plugging.

6.7 Cost

The estimated costs for implementing each of the remedies are found in Table 1.

Modifying Criteria

6.8 State Acceptance

The State of Georgia has concurred on this amendment to the selected remedy (Appendix A).

6.9 Community Acceptance

The public comment period ran from December 15, 1999 to January 15, 2000. No comments were received on the December 1999 proposed plan.

7.0 Selected Remedy

Based upon the Administrative Record, consideration of the requirements of CERCLA, the NCP, the detailed analysis of alternatives and public and state comments, EPA has selected an amended remedy for OU 1 of this site. The selected cleanup alternative to reduce to levels protective of human health and the environment risks posed by contamination found in groundwater at OU1 of the Marzone Site is Alternative 3 - Funnel-and-Gate System. This remedy involves the operation and maintenance of an in-situ funnel-and-gate system, consisting of an impermeable barrier wall which directs the contaminated groundwater through a treatment media.

This remedy will protect human health and the environment by containing and treating the most of the contaminated groundwater plume and by monitoring natural attenuation of the remaining plume. ARARs can be met, although the time frame for meeting performance standards will exceed thirty years. This remedy will reduce toxicity through treatment and mobility will be reduced by the impermeable barrier wall. The selected remedy was implemented as a full-scale pilot project in a cost-effective manner.

Groundwater Remedy

The components of the selected groundwater remedy are:

- The implementation of institutional controls to restrict the use of groundwater as a drinking water source until performance standards are achieved,
- The operation, and maintenance of an in-situ funnel-and-gate system, consisting of an impermeable barrier wall which directs the contaminated groundwater through a treatment media,
- Reduction of contamination in groundwater south of the treatment system (approximately 7% of total contamination) by natural attenuation,

- The operation and maintenance of a long-term groundwater monitoring program. This includes periodic monitoring of the effectiveness of the treatment system and of natural attenuation, and
- The proper closure of the treatment system after performance standards are met.

The most efficient placement of the impermeable barrier wall will not result in containment and treatment of all contaminated groundwater. For this type of system, the barrier wall must be placed in a location which optimizes the contamination capture and the treatment time. For OU1 of the Marzone Site, location of the wall so that it captures all contaminated groundwater would dramatically increase the time to treat the most highly contaminated groundwater. The most efficient location results in containment and treatment of approximately 93% of the mass of contaminated groundwater (see Figure 3). Field and laboratory studies have indicated that natural attenuation processes (i.e., biodegradation, dispersion, adsorption) will be effective in reducing the remaining 7% of contamination to below groundwater performance standards. The area of contamination shall be monitored to ensure that containment, treatment, and natural attenuation is effective. If EPA determines that either containment, treatment, and/or natural attenuation are not effective, it will consider the implementation of an alternative remedy or remedy modification for that area.

Performance Standards

The selected remedy will achieve the cleanup levels specified in the original ROD and presented in Table 2. All activities shall comply with ARARs, and state standards. Testing methods approved by EPA will be used to determine that the cleanup levels have been achieved. Points of compliance for the performance standards will be monitoring wells MW-3S, MS-3D, MW-10S, MW-10D, MW-11S, MW-11D, MW-12, MW-13, MW14, and sampling point SP-03 at the entrance to the distribution channel of the treatment system.

Table 2 - Performance Standards for Groundwater	
Constituent	Concentration (ppm)
alpha-BHC	0.00003
beta-BHC	0.0001
DDD	0.00077
DDT	0.00054
Ethylbenzene	0.7
Lindane	0.0002
Methyl parathion	0.0039
Xylene	10.0

8.0 Statutory Determination

Under its legal authorities, EPA's primary responsibility at Superfund sites is to undertake remedial actions that achieve adequate protection of human health and the environment. In addition, Section 121 of CERCLA establishes several other statutory requirements and preferences. These specify that, when complete, the selected remedy must meet appropriate environmental standards established under Federal and State environmental laws unless a statutory waiver is justified. The selected remedy also must be cost-effective and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. Finally, the statute includes a preference for remedies that employ treatment that permanently and significantly reduce the volume, toxicity, or mobility of hazardous wastes as their principal element. The amended remedy meets the statutory requirements and preferences of Section 121 of CERCLA as further explained below.

8.1 Protection of Human Health and the Environment

The selected remedy protects human health and the environment through containment and treatment of contaminated groundwater at the site. The selected remedy provides protection of human health and the environment by eliminating, reducing, and controlling risk through treatment, engineering controls and/or institutional controls.

8.2 Attainment of the Applicable or Relevant and Appropriate Requirements (ARARs)

Remedial actions performed under CERCLA, as amended by SARA, must comply with all applicable or relevant and appropriate requirements (ARARs) unless a waiver is justified. All alternatives considered for the site were evaluated on the basis of the degree to which they complied with these requirements. The selected alternative was found to attain ARARs.

ARARs for the groundwater at OU1 of the Marzone Site are found in Tables 3, 4, and 5.

8.3 Cost Effectiveness

Cost effectiveness is determined by comparing the cost of all alternatives being considered with their overall effectiveness to determine whether the costs are proportional to the effectiveness achieved. The cost for the selected remedy is estimated to be \$1.54 million which is comparable to the pump and treat options.

This remedy is as protective as the pump-and-treat alternative selected in the original ROD. In addition, the selected remedy has less visible impacts, no air emissions, and lower operation and maintenance costs. These factors, as well as the ease of implementing this remedy make it a reasonable value.

8.4 Utilization of Permanent Solutions to the Maximum Extent Practicable

EPA has determined that the selected remedy provides the best balance among the nine evaluation criteria for the alternatives evaluated. The selected combination provides protection of human health and the environment and is cost effective. The remedy, when complete, will provide a high degree of permanence. The remedy represents the maximum extent to which permanent solutions and treatment can be practicably utilized to remediate the groundwater at OU 1 of the Marzone Site.

8.5 Preference for Treatment as a Principal Element

The statutory preference for treatment will be met by this selected remedy.

9.0 Documentation of Significant Changes

None identified.

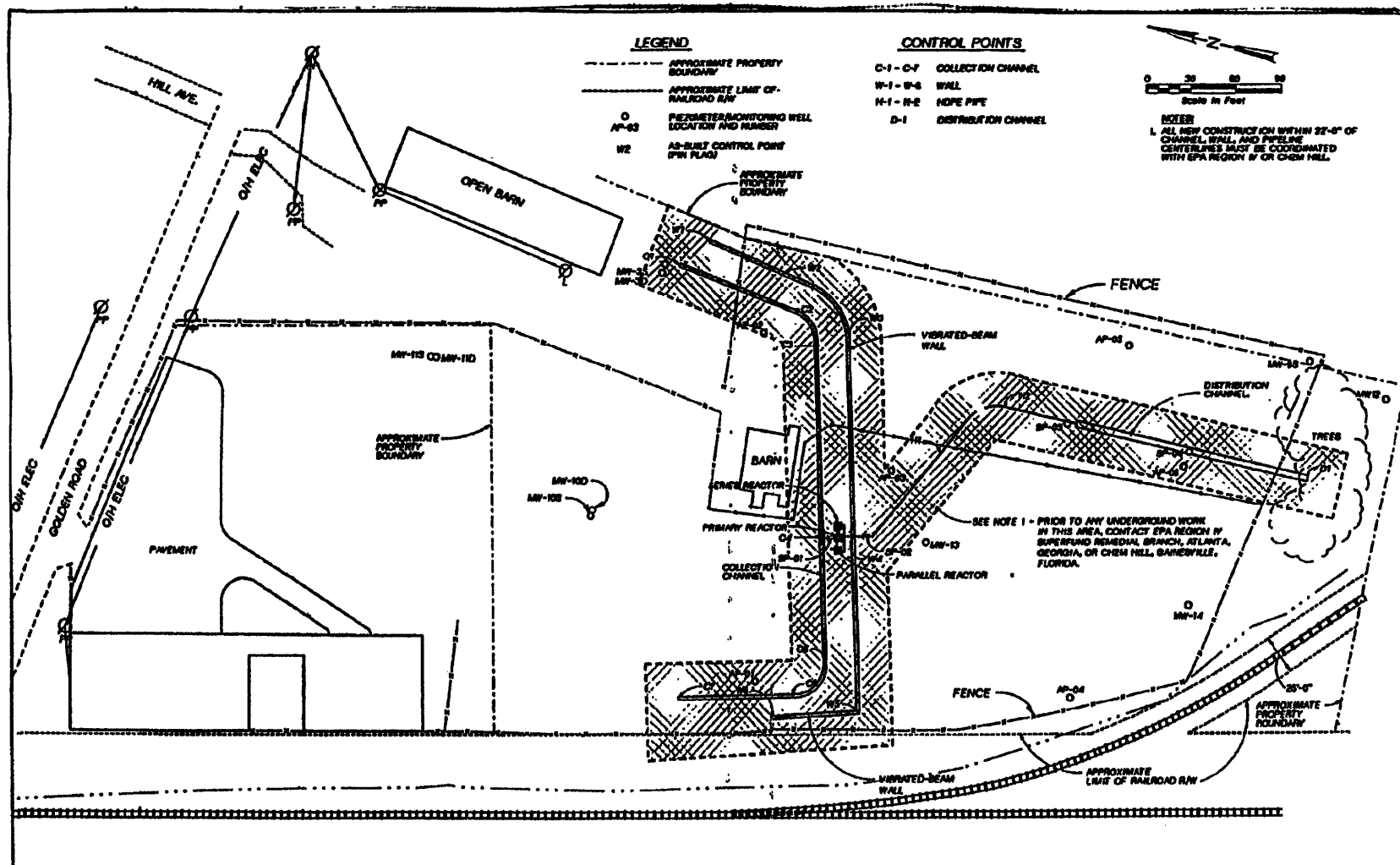


Figure 3
Funnel-and-Gate System

TABLE 3: FEDERAL ARARS FOR MARZONE SITE OU1

CLEAN WATER ACT - 33 U.S.C. §§ 1251-1376

	CITATIONS		COMMENTS
R&A	40 CFR Part 141 National Primary Drinking Water Regulations	Chemical Specific for groundwater	Establishes primary drinking water regulations pursuant to Section 1412 of the Public Health Service Act, as amended by the Safe Drinking Water Act; and related regulations applicable to public water systems.
R&A	40 CFR Part 142 National Primary Drinking Water Regulations Implementation	Chemical Specific for groundwater	Sets forth Sections 1413-1416, 1445, and 1450 of the Public Health Service Act, as amended.
R&A	40 CFR Part 143 National Secondary Drinking Water Regulations	Chemical Specific for groundwater	Establishes National Secondary Drinking Water Regulations pursuant to Section 1412 of the Safe Drinking Water Act, as amended (42 U.S.C. 300g-1); and control contaminants in drinking water that primarily affect the aesthetic qualities relating to the public acceptance of drinking water.
<p>A ----- APPLICABLE REQUIREMENTS WHICH WERE PROMULGATED UNDER FEDERAL LAW TO SPECIFICALLY ADDRESS A HAZARDOUS SUBSTANCE, POLLUTANT, CONTAMINANT, REMEDIAL ACTION LOCATION OR OTHER CIRCUMSTANCE AT OU1 OF THE MARZONE SITE.</p> <p>R & A----RELEVANT AND APPROPRIATE REQUIREMENTS WHICH WHILE THEY ARE NOT "APPLICABLE" TO A HAZARDOUS SUBSTANCE, POLLUTANT, CONTAMINANT, REMEDIAL ACTION, LOCATION, OR OTHER CIRCUMSTANCE AT OU1 OF THE MARZONE SITE, ADDRESS PROBLEMS OR SITUATIONS SUFFICIENTLY SIMILAR TO THOSE ENCOUNTERED AT OU1 OF THE MARZONE SITE THAT THEIR USE IS WELL SUITED TO THE SITE.</p>			

TABLE 4: STATE ARARs FOR MARZONE SITE OU1			
	CITATIONS		COMMENTS
R & A	Georgia Drinking Water Regulations, Chapter 391-3-5	Chemical and Location Specific for groundwater	Establishes rules and regulations for Georgia drinking water standards and addresses wellhead protection zones.
<p>A -----APPLICABLE REQUIREMENTS WHICH WERE PROMULGATED UNDER FEDERAL LAW TO SPECIFICALLY ADDRESS A HAZARDOUS SUBSTANCE, POLLUTANT, CONTAMINANT, REMEDIAL ACTION LOCATION OR OTHER CIRCUMSTANCE AT OU1 OF THE MARZONE SITE.</p> <p>R & A --RELEVANT AND APPROPRIATE REQUIREMENTS WHICH WHILE THEY ARE NOT "APPLICABLE" TO A HAZARDOUS SUBSTANCE, POLLUTANT, CONTAMINANT, REMEDIAL ACTION, LOCATION, OR OTHER CIRCUMSTANCE AT OU1 OF THE MARZONE SITE, ADDRESS PROBLEMS OR SITUATIONS SUFFICIENTLY SIMILAR TO THOSE ENCOUNTERED AT OU1 OF THE MARZONE SITE THAT THEIR USE IS WELL SUITED TO THE SITE.</p>			

TABLE 5: TO-BE-CONSIDERED (TBCs) DOCUMENTS FOR MARZONE SITE OU1	
DOCUMENT TYPE	DESCRIPTION
USEPA, Office of Drinking Water, <u>Drinking Water Regulations and Health Advisories</u> , Washington, D.C., December 1993	Issues health advisories based on exposure to various concentrations of chemicals of concern.
<p>TBCs - TO-BE-CONSIDERED CRITERIA ARE NONE-PROMULGATED ADVISORIES AND GUIDANCE THAT ARE NOT LEGALLY BINDING, BUT SHOULD BE CONSIDERED IN DETERMINING THE NECESSARY LEVEL OF CLEANUP FOR PROTECTION OF HEALTH OR THE ENVIRONMENT.</p>	

APPENDIX A
STATE CONCURRENCE LETTER

Georgia Department of Nature Resources

205 Butler Street, S.E., Suite 1154 East Tower, Atlanta, Georgia 30334-4910

Environmental Protection Division

Harold F. Reheis, Director

Hazardous Waste Management Branch

Phone 404/656-7802 FAX 404/651-9425

February 21, 2000

Ms. Annie Godfrey
U.S. Environmental Protection Agency
Region IV (4WDSSRB)
61 Forsyth Street
Atlanta, Georgia 30303

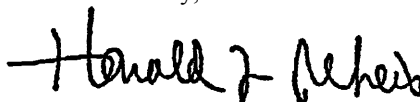
Re: Draft Record of Decision Amendment
Marzone Inc./Chevron Chemical Company
Superfund Site, Operable Unit-1,
Tifton, Georgia

Dear Ms. Godfrey:

The Georgia Environmental Protection Division (EPD) has completed review of the above referenced document and concurs with the Environmental Protection Agency's (EPA) proposed amendment to the Record of Decision (ROD) for Operable Unit-1. The proposed plan recommends a change from the groundwater remedy of a pump-and-treat system to an in-situ funnel-and-gate system. EPD would like to thank EPA for incorporating our review comments of the proposed plan into the ROD amendment.

If we can be of further assistance to you, please contact Norman R. Woodburn at (404) 656-7802.

Sincerely,

A handwritten signature in black ink, appearing to read "Harold F. Reheis". The signature is stylized with a large initial "H" and a cursive script.

Harold F. Reheis
Director

HFR:nwr

s:\rdrive\norman\godfrey.rod